

# USCMS Engineer Status Report for April 2004

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## 1 Work Performed This Month

OSCAR/Mantis development, maintenance and testing

- implemented interfaces for storage and retrieval of random numbers (important for debugging and testing reproducibility) and the registering of alternative user-defined track stacking (prioritization)
- commissioned in OSCAR release process OVAL tests implemented by P. Arce
- updated OSCAR/Mantis to Geant4 6.1 and new physics lists
- delivered OSCAR\_3.2.2 public release as basis for large-scale robustness and performance tests and further development
- prepared and submitted OSCAR and Mantis abstracts to CHEP 2004

## 2 Status of Deliverables

With respect to plans from previous month

- OSCAR G4-6.1 based release: done
- large-scale robustness and performance tests for OSCAR/G4-6.1: ready to start as soon as modest production resources required are available
- implementation of outstanding requirements:
  - done: random number storage and retrieval, user stacking action
  - pending: transient access to OSCAR/G4 hits, storage and retrieval of cross-section tables, user access to G4 tracking and stepping managers

### 3 Plans For Next Month

- carry out OSCAR/G4-6.1 robustness and performance tests
  - continue on implementation of outstanding requirements

### 4 Longer Term Plans

- release and testing of OSCAR with new magnetic field, new detector geometry implementations etc (see task list in <http://cmsdoc.cern.ch/oscar/>)
  - implement and test infrastructure for "partial-event" simulation, i.e. simulation of leptons only with superposition of remaining full event with correct kinematics (e.g. for  $W\text{-}\bar{\nu}_e/\nu_e$ ); important for very large productions, order of 50M events \* 2 for above example
  - OSCAR interfaces to HepMC
  - infrastructure for local magnetic field management; local = tailored to detector system and selected particles
  - OSCAR interfaces to fast shower parametrization (G4Flash)

### 5 Resources Needed

- no new resources needed at this point

### 6 Links To Supporting Documentation

- OSCAR WWW maintenance: <http://cmsdoc.cern.ch/oscar/>
- OSCAR main page: <http://cmsdoc.cern.ch/oscar/>
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- OSCAR release tables and release notes in <http://cmsdoc.cern.ch/oscar/>
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- OSCAR task list in <http://cmsdoc.cern.ch/oscar/>
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- OSCAR Savannah entries: <https://savannah.cern.ch/projects/oscar/>
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- OSCAR mail archive: <https://wwwlistbox.cern.ch/earchive/cms-oscar-developers/>
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- SPROM presentations: <http://cmsdoc.cern.ch/swsi/agendas.html>